ADEQ Arizona Department of Environmental Quality

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Interstitial Monitoring for USTs

A Viable Method of Leak Detection for Underground Storage Tank (UST) Systems

WHAT IS IT?

- Interstitial monitoring detects leaks in the space between the tank and/or piping and a secondary containment.
- Interstitial monitoring can be used in double-walled systems with an interstitial space or in a UST system with a secondary barrier immediately around or beneath it.

WILL YOU BE IN COMPLIANCE?

- When installed and operated according to the manufacturer's specifications, interstitial monitoring meets Arizona's leak detection requirements for new and existing UST systems.
- Operation of the monitoring device continuously or at least once each month fulfills the requirements for the life of the tank.
- Interstitial monitoring can also be used to detect leaks from piping.

WILL IT WORK AT YOUR SITE?

- In areas with high groundwater or significant rainfall, it may be necessary to select a secondary containment system that completely surrounds the UST system to prevent moisture from interfering with the monitors.

WHAT ARE THE REGULATORY REQUIREMENTS?

- The interstitial space must be checked at least once every month.
- A release from the inner wall must be detectable in a double-walled system.
- If a secondary barrier is used, the secondary barrier must be located immediately around or beneath the tank.
- The secondary barrier must:
  1. Direct a leak toward the monitors.
  2. Not allow the specific product being stored to pass through it any faster than 10^{-6} centimeters per second (cm/sec).
  3. Be compatible with the product stored in the tank.
  4. Not interfere with the UST system's cathodic protection.
- Regardless of interstitial monitoring method, maintain a log of your monthly monitoring data at the facility.
- Keep all records of maintenance, calibration and testing at the facility for review by ADEQ inspectors.

HOW DOES THE INTERSTITIAL MONITORING METHOD WORK?

- Secondary containment provides a barrier between the portion of the UST system that contains product and the outside environment. The barrier is shaped so that a leak will flow towards the interstitial monitor.
- Barriers include:
  1. Double-walled or "jacketed" tanks in which an outer wall partially or completely surrounds the primary tank.
  2. Internally fitted liners (bladders).
  3. Leak proof excavation liners (secondary barrier) that partially or completely surround the tank and direct any release to a monitoring point.
- Clay and other earthen materials <u>cannot be used as barriers.</u>

INTERSTITIAL MONITORS

- Monitors are used to check the space between the tank and/or piping and the barrier for leaks and alert the operator if a leak is suspected.

- Some monitors indicate the physical presence of the leaked product, either liquid or gaseous. Other monitors check for a change in condition that indicates a hole in the tank, such as a vacuum loss or a monitoring liquid level change between the walls of a double-walled tank.
- Monitors can be as simple as a dipstick used at the lowest point of the containment to see if liquid product has leaked and pooled there. Monitors can also be sophisticated automated systems that continuously check for leaks.
- If the monthly report from the monitoring device reads "fail", then report a SUSPECTED RELEASE within 24 hours to the UST help line at 1(800) 234-5677, Ext: 771-4303 or (602) 771-4303. However, if you have reason to believe the monitoring device is defective then immediately repair, re-calibrate or replace the defective equipment and perform an additional test. If the system passes the test, then a SUSPECTED RELEASE report is not needed.

MAINTENANCE

- Monitors must be maintained, calibrated, operated, and tested for operability according to manufacturer's instructions. In addition, the monitoring alarm must alert the attendant of the facility so appropriate actions may be taken.

CHECKLIST

- ☐ Is the interstitial monitoring equipment and any probe used certified by the equipment manufacturer or by a third party?
- ☐ Is the monitoring system tested frequently according to the manufacturer's instructions to make sure it is working properly?
- ☐ Is the monitoring system being serviced regularly by a qualified contractor according to the manufacturer's service instructions?

FOR MORE INFORMATION CONTACT:

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In the event of any discrepancy between this information and the Arizona Revised Statutes or Arizona Administrative Code, the statutes or rules shall take precedence.

Publication Number: C05-04